Future Trends in the Natural Gas Market

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Summary

Reburning (fuel staging) remains one of the least capital intensive, yet effective, forms of NOx reduction for coal-fired units; however, the high cost of natural gas has the potential to eliminate the overall economic advantages of this NOx reduction mechanism. Current forecasts for natural gas supply to North America have grown increasingly pessimistic, since the National Petroleum Council produced its comprehensive report, *Balancing Natural Gas Policy - Fueling the Demands of a Growing Economy*, in September 2003. With a growing realization that conventional, domestic natural gas production will be diminishing and that Canadian imports are also likely to decline, the EIA's Annual Energy Outlook 2004 has begun to portray an increased need for coal-fired generation and reduced gas-fired generation. The current trend toward an increasing share of coal-fired generation in the Nation's new capacity mix will create new business opportunities for NOx reduction technologies but will also make overall compliance, with specific target levels, tighter and more challenging for all.

Today, the U.S. is winding down from a six year, power plant construction boom, involving predominantly gas-fired generation, which has totaled more than 200,000 megawatts. This is, by far, the largest amount of power generation capacity ever installed in such a short period. As a result, the Nation's electricity supply margins and its economy have become extremely dependent on natural gas availability and price. Forecasts of near-to-midterm natural gas prices, from both EIA and industry analysts are on a decidedly upward trend. This has been largely due to the results of recent North American natural gas production confirming growing decline rates and lack of supply response to increased drilling. Within the last few weeks both Raymond James and Cambridge Energy Research Associates have predicted roughly $6/MMBtu for natural gas in 2005 (Henry Hub) and Guy Caruso, Administrator of EIA, indicated on April 9th that "in 2004, natural gas is expected to average significantly over $5/Mcf".

The most significant, near-term, incremental alternative for natural gas supply, importation of liquefied natural gas (LNG), has been quickly adopted in the EIA's Annual Energy Outlook, increasing 500% (for year 2020) over the last two years. Lately, however, the LNG industry has been facing more local opposition than might have been anticipated, for siting regasification plants. There is growing concern that such opposition may delay LNG availability, increase costs and put further upward pressure on natural gas prices. An additional complicating factor is that LNG regasification plants have become the subject of government, safety/security studies, due to heightened terrorism concerns as well as in consideration of a serious LNG plant accident in Algeria, in January. A substantial portion of the Nation's conventional natural gas shortfall was planned to be mitigated, in the near-term, by incremental LNG importation. To the extent this can not take place quickly, it is easy to foresee a shortfall in electric generating capacity by the end of this decade, due to lack of alternative forms of power generation development activity. The success, or lack thereof, in growing LNG imports has the potential to enlarge the range of natural gas prices that might be anticipated over the next several years. Pursuit of a large proportion of thirty to forty announced LNG projects, threatens to oversupply the marketplace and dramatically drop prices. Furthermore, even the threat of such a large amount of incremental imported LNG has the potential to inhibit domestic natural gas exploration and development activity, which might otherwise be taking place today. This lack of activity would tend to ultimately exacerbate upward price trends, should the growth in LNG supply be delayed.

Ultimately, domestic energy supplies, which have only seen sporadic deficiencies over the last couple decades, may be on the verge of becoming a more prominent and constant focus of the Nation's attention. The potential for impact on the Nation's economy and the quality of life of its citizens will stimulate increasing debate about energy use, conservation and environmental issues. Natural gas will likely continue to grow its perceived value as a high quality fuel and its availability for anything other than unique, high value uses will diminish, unless supply can be quickly and effectively supplemented by imported LNG. Use of reburning with natural gas for NOx control will be, likewise, dependent on the successful growth of the domestic LNG industry.